AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 5, line 15, as follows:

SUMMARY ~~OF THE INVENTION~~

Please amend the paragraph beginning at page 5, line 20, as follows:

It is a general object ~~of the present invention~~ to provide an efficient mechanism for forwarding information in a multi-hop network.

Please amend the paragraph beginning at page 5, line 23, as follows:

It is an object ~~of the invention~~ to improve the performance of a multi-hop network with regard to throughput, delay characteristics and/or power consumption.

Please amend the paragraph beginning at page 5, line 26, as follows:

It is also an object ~~of the invention~~ to improve Quality of Service (QoS) support in the network.

Please amend the paragraph beginning at page 5, line 29, as follows:

Another object ~~of the invention~~ concerns improvements with regard to load distribution.

Please amend the paragraph beginning at page 6, line 1, as follows:

It is a particular object ~~of the invention~~ to provide a method and system for efficient forwarding of information in a multi-hop network.

Please amend the paragraph beginning at page 6, line 7, as follows:

Another object ~~of the invention~~ is to provide a control node supporting efficient forwarding of information in a packet radio multi-hop network.

Please amend the paragraph beginning at page 6, line 13, as follows:

A ~~main aspect of the invention is based on the idea that a~~ higher degree of freedom in the forwarding process can be obtained by investigating which destinations and/or flows that are represented in a transmitting node and selecting relay direction through a wise choice of destination and/or flow. In effect, the forwarding algorithm proposed by the invention jointly selects i) a relay node among multiple relay candidate nodes and ii) at least one of a) flow among multiple flows and b) destination among multiple destinations. The transmitting node then selects a set of information heading for a selected destination and/or belonging to a selected flow from the transmit queue, and finally transmits the selected information to the selected relay node.

Please amend the paragraph beginning at page 6, line 23, as follows:

In this way, ~~the invention effectively enables~~ selection among more relay nodes is effectively enabled compared to the situation of simply selecting a suitable relay node for the first packet at the head of the transmit queue. The main reason for this added degree of freedom lies in the fact that different packets, or more generally different sets of data, may be heading in various directions from the transmitting node, thus enabling selection of relay node in several general forwarding directions. The selection is often based on cost progress, and maybe even forward

progress in geographic distance. It is also possible to consider QoS (Quality of Service) aspects in the selection process, since for example different flows may have different QoS requirements. By way of example, a flow with strict delay requirements may then be prioritized higher than a flow with more relaxed delay requirements. Fairness between destinations and/or flows is another aspect that may be considered in the selection process. Anyway, the selection of destination/flow ultimately translates into a selection of information to be transmitted from the transmit queue.

Please amend the paragraph beginning at page 10, line 15, as follows:

The ~~invention~~ technology described offers the following advantages:

Please amend the paragraph beginning at page 11, line 14, as follows:

Other advantages ~~offered by the present invention~~ will be appreciated upon reading of the below description of the example and non-limiting embodiments ~~of the invention~~.

Please amend the paragraph beginning at page 11, line 19, as follows:

~~The invention, together with further objects and advantages thereof, will be best understood by reference to the following description taken together with the accompanying drawings, in which:~~

Please amend the paragraph beginning at page 11, line 23, as follows:

Fig. 1 is a schematic diagram illustrating an exemplary four-phase communication scheme according to a preferred example embodiment ~~of the invention~~;

Please amend the paragraph beginning at page 11, line 26, as follows:

Fig. 2 is a schematic diagram illustrating an example of a four-phase scheme with synchronized transmission of time slots in a multi-hop network according to a preferred example embodiment ~~of the invention~~;

Please amend the paragraph beginning at page 12, line 1, as follows:

Figs. 3A-B are schematic flow diagrams of an exemplary forwarding method according to a preferred example embodiment ~~of the invention~~ on the transmitter side and receiver side, respectively;

Please amend the paragraph beginning at page 12, line 7, as follows:

Fig. 4B illustrates the selection of destination/flow and relay node according to an ~~exemplary~~ example embodiment ~~of the invention~~;

Please amend the paragraph beginning at page 12, line 16, as follows:

Fig. 7 is a schematic block diagram of relevant parts on the transmitter side according to an ~~exemplary~~ example embodiment ~~of the invention~~;

Please amend the paragraph beginning at page 12, line 19, as follows:

Fig. 8 is a schematic block diagram of relevant parts on the receiver side according to an ~~exemplary~~ example embodiment ~~of the invention~~; and

Please amend the paragraph beginning at page 12, line 25, as follows:

DETAILED DESCRIPTION ~~OF EMBODIMENTS OF THE INVENTION~~

Please amend the paragraph beginning at page 13, line 1, as follows:

The ~~invention~~ technology relates to multi-hop networks such as packet radio multi-hop networks, and more particularly to a novel forwarding scheme for multi-hop networks called multi-user diversity forwarding (denoted MDF).

Please amend the paragraph beginning at page 14, line 4, as follows:

The ~~invention~~ technology will now be described by way of example. In addition to information on which flows and/or destinations that are represented in the transmitting node and cost information from an underlying route/cost determination protocol, the selection process is normally based on information representing link performance between the transmitting node under consideration and each one of the relay candidate nodes. For this reason, communication is

preferably divided into three or four phases, an interrogation phase, a response phase, a data phase and an optional acknowledgement phase, as schematically illustrated in Figs. 1 and 2.

Please amend the paragraph beginning at page 21, line 14, as follows:

In the ~~invention~~ technology described, it is possible to select relay node in all destination/flow directions of the packets represented in the transmit queue 110 of the considered transmitting node. For example, the transmit queue may be packet-based (1) with different packets ready for transmission. Alternatively, the transmit queue comprises a number of buffers (2), each buffer holding data for a given destination or flow. In the second alternative, data from the various buffers are later encapsulated into packet form, once a suitable link mode scheme has been selected. The transmitting node 100 maintains a list of destinations/flows currently represented in the node, thus allowing selection among the different destinations/flows. This in effect enables selection of relay node in several general forwarding directions. From Fig. 4B, it can be seen that packet PCK Y is destined for a destination in a completely different direction than packet PCK X. In this direction, there is a relay node 200 that gives an absolute maximum forward progress, close to the transmit range of the transmitting node 100. From a forward progress point of view, it is thus clearly more advantageous to transmit packet PCK Y than PCK X.

Please amend the paragraph beginning at page 29, line 1, as follows:

In reference [12], the optimal transmission range and code rates where investigated in a highly loaded frequency hopping packet radio network by a so-called information efficiency forward progress performance measure. The difference here is that we do not use information efficiency forward progress as a performance measure, but rather as an objective function to be optimized. This is made possible due to the interrogation-response phase and the selection among multiple relay candidate nodes. The ~~rational~~ rationale behind an objective function based on information forward progress is that the "speed over ground" for a packet or, equivalently the rate times the traversed distance towards the destination, shall be as high as possible. The expression for information forward progress defined below is useful for evaluation purposes and illustrates the existence of a maximum. Note that the analysis of the metric in the following does not follow reference [12]. Assume for example that an infinite number of relay nodes are positioned along a line in the desired direction of routing, and one is searching the optimum node to send to as well as at what rate should be used. A good measure to use is then the information forward progress, *Z*, given by Shannon's channel capacity formula times the hop-distance:

$$Z = R \cdot B \cdot \lg_2\left(1 + \frac{P \cdot Const}{R^{\alpha} \cdot N}\right),$$

where P is the transmit power, N is the noise power, α is the propagation constant (typically between 2-4 and 2 for free space propagation), *Const* is a propagation constant, B is the bandwidth and R is the distance between the transmitter and receiver.

Please amend the paragraph beginning at page 42, line 1, as follows:

Given the above, it should be recognized that the above invention may incorporate or exploit other aspects. For instance, other MAC protocols, such as Seedex [13], may be used. A variety of route determination protocols and cost metrics may be deployed. The ~~invention~~ technology may

be combined with congestion control mechanisms, e.g. through adaptively varying the transmit probability. The ~~invention~~ technology may also send multiple packets consecutively in a time slot as long as there is space in the time slot and transmission ~~adhere~~ adheres to given rules ~~of the invention~~ (~~i.e.~~ e.g., multiplexing of several packets within one timeslot).